

## Geometry Chapter 6 Practice Test

## Multiple Choice

Identify the choice that best completes the statement or answers the question.

- A 1) The endpoints of a segment are  $W(0,9)$  and  $S(10,11)$ . What are the coordinates of the midpoint?

a)  $(5,10)$

b)  $(5,1)$

c)  $(-5,-10)$

d)  $(-5,-1)$

$$\left( \frac{0+10}{2}, \frac{9+11}{2} \right) = \left( \frac{10}{2}, \frac{20}{2} \right) = (5, 10)$$

- B 2) Suppose  $3x - 9 = 12$ . Which is true because of the Division Property of Equality?

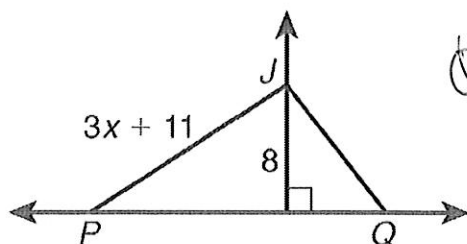
a)  $3x = 21$

b)  $x - 3 = 4$

c)  $3x = 3$

d)  $x - 3 = 12$

- C 3) What are all possible values for  $x$ ?



a)  $x < 8$

b)  $x > 8$

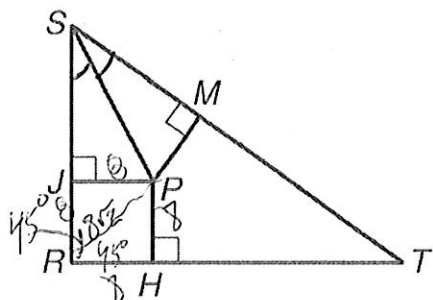
c)  $x > -1$

d)  $-1 < x < 8$

~~$3x + 11 < 8$~~   
 $3x + 11 > 8$   
 $3x > -3$   
 $x > -1$

C 4) Given:

$$\overline{PR} = 8\sqrt{2}, \overline{PM} \perp \overline{ST}, \overline{PJ} \perp \overline{SR}, \overline{PH} \perp \overline{RT},$$

 $\overline{SP}$  bisects  $\angle RST$ , and  $m\angle SRP = m\angle TRP = 45^\circ$ .
What is  $PM$ ?

Points on the  
angle bisector are equidistant  
from its sides

a)  $\sqrt{2}$

b)  $4\sqrt{2}$

c) 8

d)  $8\sqrt{2}$

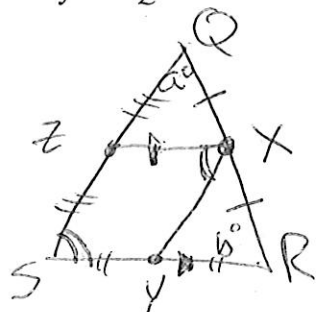
5) In  $\triangle QRS$ ,  $X$ ,  $Y$ , and  $Z$  are the midpoints of  $\overline{QR}$ ,  $\overline{RS}$ , and  $\overline{QS}$ , respectively.  $m\angle Q = a^\circ$  and  $m\angle R = b^\circ$ .  
What is  $m\angle YXZ$ ?

a)  $a^\circ$

b)  $b^\circ$

c)  $(a+b)^\circ$

d)  $(180 - a - b)^\circ$



6) The perimeter of a regular polygon is 36 centimeters. The length of one side is 4.5 centimeters. Which identifies the polygon?

a) decagon

b) hexagon

c) octagon

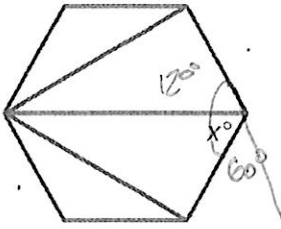
d) pentagon

$$4.5n = 36$$

$$n = 8$$

B

- 7) The figure is a regular polygon. What is the value of
- $x$
- ?



$$\text{Exterior} = \frac{360}{6} = 60^\circ$$

- a) 30  
b) 60

- c) 90  
d) 129

P

- 8) The exterior angles of a triangle measure
- $5x^\circ$
- ,
- $(x+61)^\circ$
- , and
- $(3x+38)^\circ$
- . Which is the best classification of the triangle?

- a) acute  
b) equiangular

- c) obtuse  
d) right

$$5x + x + 61 + 3x + 38$$

$$9x + 99 = 360$$

$$x = 29^\circ$$

|          |     |    |
|----------|-----|----|
| Exterior | 145 | 90 |
|          | 135 | 90 |

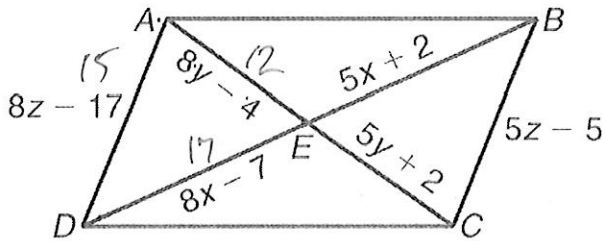
A

- 9) Three vertices of parallelogram
- $ABCD$
- are
- $A(-2, -2)$
- ,
- $B(2, 1)$
- , and
- $C(0, 7)$
- . What are the coordinates of vertex
- $D$
- ?

- a)  $(-4, 4)$   
b)  $(4, 10)$

- c)  $(0, -8)$   
d) Not here

- D 10)  $ABCD$  is a parallelogram. What is the perimeter of  $\triangle AED$ ?

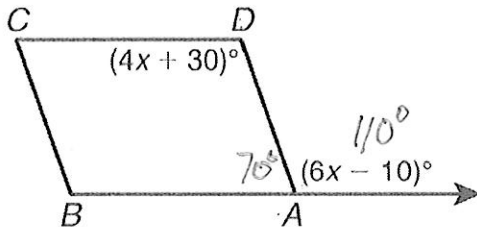


- a) 5.5                      c) 19  
b) 29                      d) 44

$$\begin{aligned} 8y - 4 &= 8y + 2 \\ 3y &= 6 \\ y &= 2 \end{aligned} \quad \begin{aligned} 8x - 7 &= 5x + 2 \\ 3x &= 9 \\ x &= 3 \end{aligned}$$

$$\begin{aligned} 8z - 17 &= 5z - 5 \\ 3z &= 12 \\ z &= 4 \end{aligned}$$

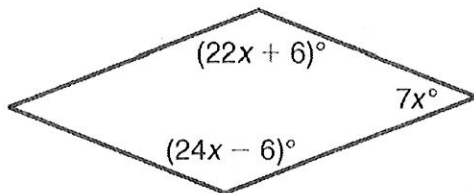
- B 11) In  $\square ABCD$ , what is  $m\angle DAB$ ?



- a)  $7^\circ$                       c)  $110^\circ$   
b)  $70^\circ$                       d) Not here

$$\begin{aligned} 4x + 30 &= 6x - 10 \\ 40 &= 2x \\ x &= 20 \end{aligned}$$

- C 12) For what value of  $x$  will the quadrilateral be a parallelogram?

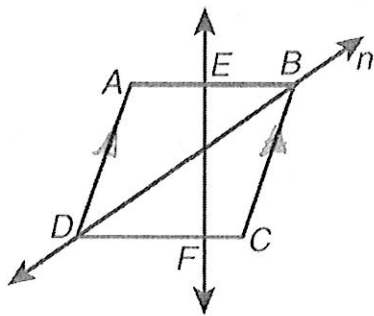


- a) 4                      c) 6  
b) 5                      d) 7

$$\begin{aligned} 22x + 6 &= 24x - 6 \\ 12 &= 2x \\ 6 &= x \end{aligned}$$

$$\begin{aligned} 22x + 6 + 7x &= 180 \\ 29x + 6 &= 180 \\ 29x &= 174 \\ x &= 6 \end{aligned}$$

- D 13) If  $\overline{AD} \parallel \overline{BC}$ , which CANNOT be used to justify the statement that  $ABCD$  is a parallelogram?

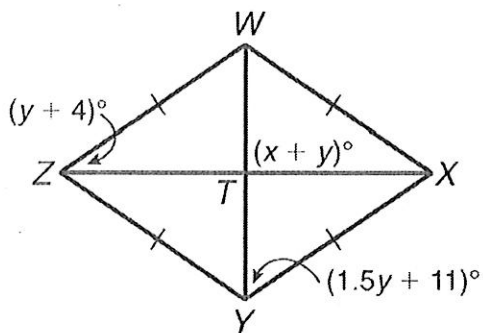


- a)  $\overleftrightarrow{EF} \perp \overline{AB}$  and  $\overleftrightarrow{EF} \perp \overline{CD}$   
 b)  $m\angle BEF + m\angle EFC = 180^\circ$   
 c)  $\angle ABD \cong \angle CDB$   
 d)  $\overline{BA} \cong \overline{DC}$

- D 14) The vertices of a quadrilateral are formed by the intersection of the lines for the equations  $y = x$ ,  $y = -x$ ,  $y = 3$ , and  $y = -3$ . Which term best describes the quadrilateral?

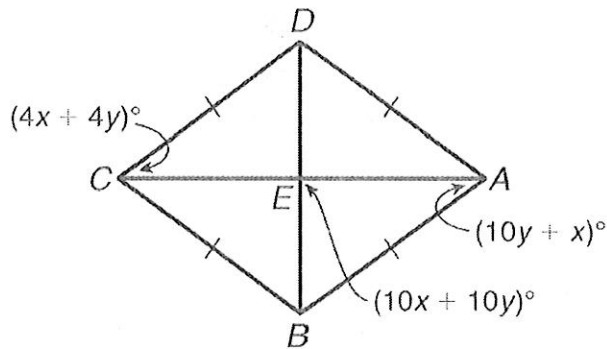
- a) parallelogram  
 b) rectangle  
 c) rhombus  
 d) square

- C 15) In  $\square WXYZ$ , what is the value of  $x$ ?



- a) 30  
 b) 45  
 c) 60  
 d) Not here

$$\begin{aligned} x + y &= 90 \\ 2.5y + 15 &= 90 \\ 2.5y &= 75 \\ y &= 30 \end{aligned}$$

B16) What is the value of  $y$ ?

- a) 2  
b) 3

- c) 6  
d) Not here

$$3(10x + 10y = 90)$$

~~5x + 5y = 90~~

$$4x + 4y = 10y + x$$

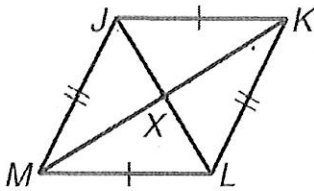
$$5(3x - 6y = 0)$$

$$30x + 30y = 270$$

$$15x - 30y = 0$$

$$4.5x = 270$$

$$x = 60$$

A17) Given  $\square JKLM$ , which is valid?

- a) If  $\angle JXK \cong \angle KXL$ , then  $JKLM$  is a rhombus.  
b) If  $\triangle JXM \cong \triangle JXK$ , then  $JKLM$  is a square/

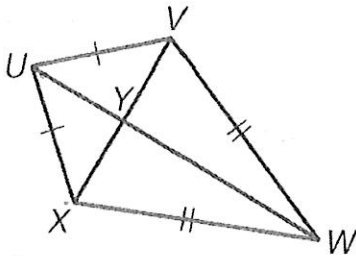
- c) If  $\triangle JXM \cong \triangle L XK$ , then  $JKLM$  is a square.  
d) If  $\angle MJK \cong \angle KXL$ , then  $JKLM$  is a rectangle.

B

18) Which points are the vertices of a rectangle that is NOT a square?

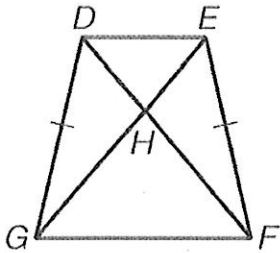
- a)  $(-10, 10), (0, 0), (14, 2), (4, 12)$   
b)  $(-4, 1), (-1, 4), (5, -2), (2, -5)$

- c)  $(2, 2), (6, -2), (2, -6), (-2, -2)$   
d) Not here

D19) Given kite  $UVWX$ , which provides insufficient information to determine the measures of all the angles?

- a)  $m\angle XUV$  and  $m\angle W VX$   
 b)  $m\angle XUY$  and  $m\angle YWV$

- c)  $m\angle XWY$  and  $m\angle XUW$   
 d)  $m\angle UXW$  and  $m\angle UVW$

A20) In isosceles trapezoid  $DEFG$ ,  $DF = x^2 - 3x$  and  $EG = -5x + 15$ . What is the value of  $x$ ?

- a)  $-5$   
 b)  $-3$

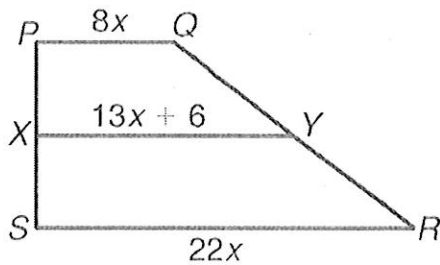
- c)  $3$   
 d)  $5$

$$x^2 - 3x = -5x + 15$$

$$x^2 + 2x - 15 = 0$$

$$(x+5)(x-3) = 0$$

$$x = -5 \text{ or } x = 3$$

A21) In trapezoid  $PQRS$ , if  $\overline{YX}$  is the midsegment, what is the value of  $x$ ?

$$20x =$$

$$15x = 13x + 6$$

$$2x = 6$$

$$x = 3$$

- a) 3
- b) 8

- c) 12
- d) 24

**Matching***Match each vocabulary term with its definition.*

- a) kite
- b) trapezoid
- c) rectangle
- d) polygon
- e) square
- f) rhombus
- g) parallelogram

C

1) a quadrilateral with four right angles

E

2) a quadrilateral with four congruent sides and four right angles

F

3) a quadrilateral with four congruent sides

G

4) a quadrilateral with two pairs of parallel sides



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5) a quadrilateral with exactly two pairs of congruent consecutive sides